

Amendment submitted in response
to Office Action mailed 9/20/06
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Amendments to the Claims

Claims have been reproduced below for the convenience of the Examiner.

Claims 1-37 (Canceled)

38. (currently amended): A method of routing network traffic, comprising:

receiving a data stream of cells at an input layer, each cell of said data stream of cells including data and a header to designate a destination device;

routing a selected cell from said input layer to a selected intermediate layer circuit within a set of intermediate layer circuits, said routing including routing said selected cell to a specified buffer within said selected intermediate layer circuit that corresponds to said destination device of said selected cell, wherein the buffer is configured to release the selected cell on a continuous basis;

delivering said selected cell from said selected intermediate layer circuit to a selected output layer circuit within a set of output layer circuits, said selected output layer circuit corresponding to said destination device of said selected cell; and

generating a back-pressure signal representative of a status of said selected output layer circuit for providing a responsive feedback to said input layer such that said routing is responsive to said status of said selected output layer circuit.

39. (previously presented): The method of claim 38 further comprising duplicating said selected packet when said header specifies that said selected packet is a multicast packet.

40. (previously presented): The method of claim 39 wherein duplicating is performed at said selected intermediate layer circuit.

41. (previously presented): The method of claim 38 wherein said routing includes routing said selected cell to a dedicated high priority traffic intermediate layer circuit when said header specifies that said selected cell has a high priority.

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42. (previously presented): A method of routing network traffic, said method comprising:
receiving a data stream with a set of cells, each cell including data and a header to designate a destination device;

assigning a selected cell of said set of cells to a selected queue of a set of queues within an input layer circuit, said selected cell specifying a selected destination device, said selected queue corresponding to said selected destination device;

routing said selected cell to a selected intermediate layer circuit within a set of intermediate layer circuits, said selected intermediate layer circuit including a set of buffers corresponding to a set of destination devices, said selected intermediate layer circuit assigning said selected cell to a selected buffer of said set of buffers, said selected buffer corresponding to said selected destination device; and

sending said selected cell as said selected cell arrives at said selected intermediate layer circuit to a selected output layer circuit within a set of output layer circuits, said selected output layer circuit corresponding said selected destination device, said selected output layer circuit storing said selected cell prior to delivering said selected cell to an output node.

43. (previously presented): The method of claim 42 wherein said routing is initiated when said selected queue reaches a specified cell volume level.

44. (previously presented): The method of claim 42 further comprising duplicating said selected cell when said header specifies that said selected cell is a multicast cell.

45. (previously presented): The method of claim 44 wherein said duplicating is performed at said selected intermediate layer circuit

46. (previously presented): The method of claim 42 wherein said routing includes routing said selected cell to a dedicated high priority traffic intermediate layer circuit when said header specifies that said selected cell has a high priority.

47. (previously presented): The method of claim 42 further comprising:

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generating a flow control warning signal in response to output layer congestion at said selected output layer circuit;

forming a flow control header signal within a header of an incoming data cell in response to said flow control warning signal; and

processing said incoming data cell through said selected intermediate layer circuit and said selected output layer circuit in accordance with said flow control header signal.

48. (previously presented): The method of claim 42 wherein said routing includes routing said selected cell to a selected intermediate layer circuit within a subset of intermediate layer circuits that remain operative after one or more intermediate layer circuits within an previously presented set of intermediate layer circuits become inoperative.

49. (previously presented): The method of claim 42 wherein said sending includes sending said selected cell to a selected output layer circuit within a subset of output layer circuits that remain operative after one or more output layer circuits within an previously presented set of output layer circuits become inoperative.

50. (previously presented): The method of claim 42 wherein said sending includes sending said selected data cell from said selected intermediate layer circuit without communicating timing information with other intermediate layer circuits within said set of intermediate layer circuits.